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May 24, 2004

U.S. Department of Transportation,  
Docket No. FAA-2004-17168,  
400 Seventh Street, SW.,  
Nassif Building  
Room PL-401,  
Washington, DC 20590-001

Subject:           Review of Existing Regulations

References:       14 CFR Parts 25 and 33

Gentlemen,

GE Aircraft Engines has reviewed FAA Docket No. FAA-2004-17168. This docket invites the public to suggest to the FAA which regulations now in effect we believe should be amended, eliminated or simplified.

We would suggest to you that FAR 25.901b2 is obsolete, impossible to interpret consistently and has no well-defined means of compliance.

- Since the publication of this regulation, the propulsion community has developed a change in approach for propulsion system maintenance. Engines are overhauled “on condition:” rather than at some predetermined overhaul interval; the phrase “safe operation between normal overhauls or inspections” is therefore very ambiguous. No specific time interval is involved and the trigger for an overhaul – or in most cases, an inspection – is an observed departure from normal operation.
- The phrase ‘safe operation between overhauls “ first appears in the final rule issued in November 1964, and is best interpreted as mandating some reasonable, unquantified degree of reliability for the powerplant. The reliability of the propulsion system has improved remarkably over the intervening 40 years, to the point where all commercially viable propulsion systems greatly improve upon the standard of reliability desired at the time this rule was published. (The normal IFSD rate in the 1960s was between 1 and 0.1 IFSDs/ 1000 engine hours, for all causes. The large commercial transport fleet currently operates at close to .01 IFSDs/1000 hours- a level of reliability which would have been considered astonishing in the 1960s.)

Since the current and future applications meet the intent of this rule by evolution of the supporting technology to provide excellent reliability, and since this rule has no clear means of compliance, and relies wholly upon the judgment of the certification engineer , we suggest that this rule is no longer useful or effective. We request that you consider rescinding 25.901b2 as having outlived its purpose.

With regard to FAR 33 regulations, GE also suggests that the following sections of 14 CFR Part 33 be reviewed.

### Section 33.97 Thrust Reversers

This section would benefit from a revision to address the difference between fan (cold structure) and core (hot structure) reversers. Also the endurance test and hence the calibration test are almost never performed with the reverser(s) installed. More often than not, simulated service cycles have satisfied the 33.97(a) requirement.

### Section 33.88 Engine Overtemperature Test

This requirement was originally a 5 minute uncooled rotor integrity demonstration (reference AC33-3). As implemented by Amendment 6, it became a 30 minute test which was found to be overly severe because of flowpath limitations. Amendment 10 changed the duration back to 5 minutes but also changed the focus from a rotor integrity demonstration to an overall hot section durability demonstration. There is little evidence that cooled rotors are significantly influenced by a 75 degrees F increase in gas path temperature, making this requirement superfluous from a safety standpoint. Further there is no direct JAR-E or CS-E corollary. JAR-E 700 and CS-E 700, Excess Operating Conditions, is the closest related requirement and it only comes into play if the conditions of speed and temperature can arise.

### Section 33.87 Endurance Test

This section should be revised to allow the use of other test cycles based upon submittal of acceptable data. The rationale is that the cycle was defined at a time when engine architecture and control systems were of a much simpler nature and may not provide the best test for a specific change or application. This can represent an undue burden on the applicant.

### Section 33.17 Fire prevention

This section of 14 CFR Part 33 does not take account of fire protection zones as used at the aircraft level for engine certification. This rule should be revised to allow for the actual installations, with these installation assumptions documented in the Installation Manual required by 14 CFR Part 33 section 33.5.

We would like to thank the FAA for the opportunity to comment on FAA regulations.

Sincerely,

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